OPINION

Whither the autopsy?

Seth L. Haber, MD

Whither the autopsy: What will become of the autopsy? Wither the autopsy: Will the autopsy dry up and fade away? Whether the autopsy: Should we continue to do autopsies at the same rate? Weather the autopsy: Can we defend the autopsy as cost-effective and risk-effective?

The College of American Pathologists recognizes the autopsy as a valuable medical procedure and resource, performed by a qualified physician for purposes of assessing the quality of patient care, evaluating clinical diagnostic accuracy, and determining the effectiveness and impact of therapeutic regimens. In addition, it is recognized as a valuable procedure for discovering and defining new and changing diseases, increasing the understanding of biological processes of disease, augmenting clinical and basic research, providing accurate public health and vital statistical information and education as it relates to disease, and obtaining medical-legal factual information.

Futhermore, the CAP recommends that a request be made for autopsy on every death, with particular emphasis placed upon certain deaths.

Just how valuable is the modern autopsy, and why is the incidence and frequency declining to less than 15 percent of deaths of hospitalized patients? Are all autopsies created equal? In many cases, much of what we pathologists see at autopsy has already been described after EKG, CT, MRI, ultrasound examination, scopes and catheters introduced through natural or iatrogenic orifices, exploratory surgery, and/or biopsy needles. Are the recent JCAHO elimination of autopsy requirements and the residency-certifying boards' proposed requirements for a designated percentage of autopsies idealistic, realistic, ritualistic, or anachronistic? Is one autopsy, attended by a half-dozen interested clinicians, more or less instructive and productive than a half-dozen autopsies attended only by the pathologist and the assistant?

Autopsies confirm and clarify clinical impressions, correct antemortem diagnoses, help to determine the cause of death, and provide extensive information about human illnesses and the morphologic changes they produce in tissues and organs. They are invaluable in discovering and defining new diseases, evaluating diagnostic tests and surgical procedures, evaluating therapeutic regimens, and investigating occupational and environmental diseases. They frequently uncover inheritable disease, contribute to medical and epidemiological research, and provide a basis for reassuring the clinicians and family members. Autopsies also contribute to medical education, research, quality assurance programs, and the processing of insurance claims.

I could not and would not dispute the value of autopsies, but I would dispute whether they are all cost-effective and risk-effective. Is the routine "screening" autopsy cost-effective? Is the indiscriminant performance of autopsies a waste of resources, as well as an unnecessarily hazardous exposure to autopsy-associated diseases? Should autopsies be limited, in number and extent, after discussions between the clinician and the pathologist?

What are the pathologist's obligations to do a particular autopsy? Is a signed autopsy "slip" a permit, a request, an obligation, or a command? Does it make any difference why it was requested, and whether the autopsy was requested by the attending physician, a house officer, a researcher, a tissue bank, the family, the insurance carrier, or an attorney? Are the requesting clinicians sufficiently interested to come to the presentation of the findings, are they just moderately curious, has this been merely a pro forma request for an autopsy, or do the clinicians simply want a report on the chart for better statistics?

Is it reasonable to deny a patient a marginally indicated CT, MRI, or ultrasound examination, for example, and then to provide him or her with a screening autopsy that costs five to 10 times as much to perform? The radiologists could claim that you never know what unexpected findings will turn up at a well-done CT examination. If nothing else, a CT examination is a valuable adjunct to clinical skills, improves diagnostic accuracy, aids in the evaluation and continuing education of clinicians, provides valuable experience and information for residents, and may diagnose an unsuspected condition amenable to treatment in the still-living patient.

The autopsy is not a procedure that contributes to the health, welfare, or longevity of the subject. Perhaps in recognition of its lack of benefit or value for the subject, hospitals are not compensated directly for performing autopsies. Do we pathologists encourage autopsies, and place such a high value upon them, merely because we are the only ones performing them? Surely, we can come up with a better raison d'être if pathology is to survive as a profession. Why is it that most pathologists value autopsies so much more highly, and proselytize on their value so much more fervently, than do most clinicians? What is the average attendance of clinicians at autopsies at your medical center?

It is not sufficient justification merely to point smugly to the incidence of missed clinical diagnoses discovered at autopsy, or to the incidence of erroneous clinical diagnoses that are corrected. The key issue is to determine which of those diagnoses could have been made clinically, how many of those errors could or should have been avoided, and how maintaining or increasing the incidence of autopsies would improve diagnostic acumen in these areas. Can you document, at your hospital, where, how, and by whom the information gained at the autopsy is used and how it contributes to learning and improvements in patient care? There is no educational value, per se, merely in the clinicians' requesting permission for an autopsy, having it done by the pathologist and the assistant, and then having the pathologist publish a report for the chart—within 60 days, of course.

If pathologists are to be consistent in responding to AHA, CDC, OSHA, and NCCLS guidelines for universal precautions, we should treat every autopsy like an AIDS (or hepatitis) autopsy: "Handle the blood and body fluids/substances of all patients as potentially infectious." If we sharply curtail the extent of our examination for AIDS or hepatitis patients, we should do the same for all patients. After all, there are almost 30 times as many HIV-infected persons, who are unsuspecting and whom we don't suspect, as there are living cases of AIDS.* Unfortunately, that practice would lead to the autopsy, a currently endangered species, becoming extinct. Should we require that all clinicians who come to view autopsies wear a gown, gloves, and face shield, as we do? *Primum non nocere.*

What really are the pathologists' and assistants' risks of contracting autopsy-associated

*To date, there have been approximately 200,000 cases of AIDS reported to CDC; Some 150,000 have died; approximately 50,000 are still alive. There are an estimated 1.0 to 1.5 million HIV-positive patients in the United States. 1,500,000÷50,000=30.

Approximately one percent of patients admitted to U.S. hospitals are infected with HIV; in about one-third of them, neither the patient nor the physicians suspect it.

...to regional

Grover M. Hutchins, MD

Several years ago, the College of American Pathologists' Autopsy Committee examined a representative group of autopsy face sheets selected from those collected during Laboratory Accreditation Program inspections. The committee discovered that the information contained in a large proportion of the documents left much to be desired. This observation suggested that the decline in autopsy rates has been accompanied by a corresponding decline in the quality of autopsy work.

The Autopsy Committee subsequently has bent its efforts in an attempt to reverse this unfortunate trend through publications, seminars, data-handling projects, Q-Probes, and an APEX program, all of which address various aspects of autopsy performance and reporting. However, no matter how strenuous or well received these efforts, they will not address the deeper problems afflicting the autopsy.

The belief appears to have arisen from the emphasis on quality assurance, quality control, and similar shibboleths that the nonforensic autopsy serves no purpose other than to determine Clinician A's diagnostic and therapeutic skills as applied to Decedent B, a view implicit in Dr. Haber's hyperbole. This belief is incorrect. While providing such information on individual cases may be useful, the primary value of autopsies in the aggregate is their ability to further our understanding of the etiology and pathogenesis of disease. To meet this objective, those engaged in autopsy work require knowledge, training, and experience, and they must be able to discern the similarities and subtle differences between cases. It is difficult to acquire these skills. With medical school anatomy courses focusing on submicroscopic structures, and autopsies considered an intrusion in pathology courses, it is difficult for a student to become aware of, let alone enthralled by, the art and science of morphology. This pedagogic disregard for the body, and the patient as a whole, probably underlies the current recruitment problems in pathology.

In the millennium, there will be autopsy institutes devoted to the study of individual patients and human diseases. These regional centers will be organized in a manner similar to medical examiner systems and staffed by pathologists dedicated to investigative work. The pathologists will report individual case findings to appropriate parties and engage in studies of the etiology and pathogenesis of human disease using the centers' accumulated experience.

Regional autopsy centers would have obvious advantages. The practitioners would be truly

hepatitis A, hepatitis B, hepatitis C, hepatitis non-A non-B, delta hepatitis, HTLV-I, HIV-2, Creutzfeldt-Jakob, and the myriad other viruses, slow viruses, retroviruses, and prions that we'd all be much better off without? I realize that a pathologist's chances of coming down with autopsy-associated hepatitis is much greater than the chances of infection with HIV, HTLV-I, or CJD, but somehow I don't find that particularly reassuring. *"Prion" non nocere.*

How safe is the morgue at your medical center? It probably should have adjacent lockers and showers, provisions for hosing and steam cleaning walls and horizontal surfaces, provisions for treating fluids before they are poured down the drain, laminar air flow, an independent and isolated system for exhausting the air, negative atmospheric pressure, and an autoclave. Contrast that with the shelved, drawered, and cabineted storerooms most of our morgues have become. Even if the hospital has the proper morgue facilities, how many pathologists have the time, personnel, knowledge, dexterity, and inclination to deal with the risks properly? You know, when we do an autopsy, we can't just wear a condom and hope for the best. Do you, as a pathologist, practice only safe "dissezion"?

Barrier protection is not necessarily effective. There are no needles or scalpels that can't penetrate two, three, four, or as many gloves as anyone would care to wear. Scalpels and needles are designed to cut or penetrate through soft tissues, and do equally well on latex gloves.

Sure, pathologists can continue to do complete autopsies, and probably get away with it. Lord knows, we probably already have, maybe dozens or scores of times. But we had better watch out: it may take only a single slip of the knife or needle. At what percentage of autopsies does the pathologist or the assistant get cut, nicked, or stuck with a needle, and how many of those are actually reported? Should pathologists continue to deny the risks and go on doing autopsies as we always have? Do some pathologists feel that we do autopsies for a living and that's that? ...that the risk "goes with the territory" in pathology as well as the rest of medicine? ...that it could never happen to me? Is that attitude analogous to that of the militant homosexuals who initially denied the risks of AIDS and refused to even discuss closing the gay bathhouses?

Should each pathologist discuss with his or her spouse or "significant other" how she or he feels about the risks we are taking? The pathologist's risks become the spouse's risks, too, as well as those of their future children. Should each pathologist and his or her associates be tested for HIV antibodies? How often should it be done? What would you do differently if one of your associates were found to have an autopsy-associated conversion to HIV positivity? ...to develop autopsy-associated hepatitis B? Then why aren't you doing that now? Why wait to qualify? How many will it take? Has each of the members of your pathology department taken the full course of Heptavax-B immunization and had his or her anti-HBs levels checked? Why not? Should pathologists hire only assistants who are HIV positive and have a good anti-HBs titer?

What should we pathologists do to minimize the risks to ourselves, our assistants, our colleagues, and our families and, at the same time, continue to contribute to patient care and to medical knowledge? Although I have no easy answers, I do not think it is wise or acceptable for us to continue to deny the risks, avoid discussion, and repress our concerns.

Do those militating for a significant increase in the autopsy rate speak for us all? What do you think? Let's have a free and open discussion of this issue. Perhaps we might poll pathologists and residents for their thoughts on the risks of doing autopsies, allocating one vote for each autopsy that he or she does each year. The literal meaning of "autopsy" is "to see for one's self."

If you, as a pathologist or a clinician, have defined, considered, and calculated the risk:benefit ratios and negotiated them with your colleagues, and with your spouse or significant other, please share with all of us the position, the rationale, and the steps you are taking.

Does anyone have any idea of what "universal precautions" standards the CAP, JCAHO, AHA, CDC, NCCLS, and OSHA will recommend, if not require, five years from now? OSHA already has Draconian proposals regarding precautions against bloodborne diseases, including hepatitis, AIDS, syphilis, malaria, babesiosis, brucellosis, leptospirosis, arboviral infections, relapsing fever, viral hemorrhagic fevers, and cytomegalovirus infection, to say nothing of Lyme disease. How many hospitals will be willing or able to spend the hundreds of thousands of dollars necessary to renovate their morgues, which are generally used less than a dozen hours a week, for an expensive service for which they are not reimbursed directly? Will such economics be the death of autopsies, as we know them? Is the autopsy becoming a dying art?

Whither the autopsy? ❑

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autopsy centers

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interested in autopsies. Those daunted by the perceived risks or intellectual challenges of autopsy work need not participate. Prosectors could acquire the experience necessary to become proficient in their vocation. Information and material could be collected prospectively and analyzed appropriately. The large numbers of standardized observations obtained through the regional centers could provide high-quality epidemiologic information. Those who object to animal experimentation would have relevant alternatives to the self-perpetuating squandering of hard-earned tax dollars on the flood of formulaic "effects of X on Y in the Z" animal studies, a phenomenon well demonstrated by any abstract issue of the *FASEB Journal*. The technical problems set forth in Dr. Haber's polemic could be largely solved. Affiliating the autopsy centers with medical schools could enhance the educational use of autopsies and improve recruitment of students into pathology.

Who would pay for such autopsy institutes? Redistribution of the expenditures that presently support inefficient, underutilized, autopsy suites in individual hospitals—all requiring space, personnel, equipment, supplies, and services—would be more than adequate to cover the costs of regional autopsy centers. Certain government-supported clinical trials and investigations also should contribute to the financing of autopsy centers, and thus obtain the benefits of better endpoint data. Families could pay for autopsy examinations if contemplating civil litigation.

The major problems in establishing regional autopsy centers would relate to their operation, administration, and management. Study of these issues should begin within organized pathology. The process will require discussing options, developing a consensus, and committing energy and resources to effect change. The benefits that would accrue from establishing a national system of regional autopsy centers would justify the efforts. ❑

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